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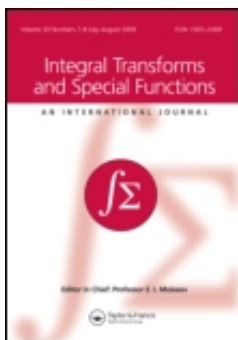
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An algebraic approach to Sheffer polynomial sequences

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Abstract

A matrix approach to Sheffer polynomial sequences is proposed; in particular, two different determinantal forms of Sheffer sequences

are given, the one as the function of a polynomial sequence of binomial type and the other as the function of the canonical base x^d . The equivalence with the classical definitions of Sheffer and Roman and Rota is proven. Then, elementary matrix algebra tools are employed to reveal the known and unknown properties of Sheffer polynomials. Finally, classical and non-classical examples are also considered.

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Keywords

- Sheffer,
- polynomials,
- determinant

AMS Subject Classification:

- 11B83,
- 65F40

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